THE BRITISH JOURNAL OF EXPERIMENTAL PATHOLOGY

THE BRITISH JOURNAL OF EXPERIMENTAL PATHOLOGY

Editors :

S. P. BEDSON
E. C. DODDS
J. C. DRUMMOND
C. L. EVANS
P. FILDES
H. W. FLOREY
W. E. GYE
H. D. KAY
E. H. KETTLE
J. McINTOSH
J. W. McLEOD
J. R. MARRACK
J. A. MURRAY
W. J. TULLOCH

VOLUME THIRTEEN

1932

LONDON : H. K. LEWIS & CO. LTD., 136, GOWER STREET, W.C. 1.
EDITORIAL AND PUBLISHING OFFICE: 28, GOWER PLACE, W.C. 1.
CANADA: THE MACMILLAN COMPANY OF CANADA, LTD., BOND STREET, TORONTO.

He thought that ideas came into clever people's heads by a kind of spontaneous generation, without parentage in the thoughts of others or the course of observation ; for as yet he believed in genius . . .—*Samuel Butler.*

(*The Way of All Flesh*, 1903, Chap. 46, § 6.)

Made and Printed in Great Britain.

Medical
Faxon

CONTENTS

No. 1.—FEBRUARY.

PAGE

WILSON, G. S., AND MILES, A. A.—The Serological Differentiation of Smooth Strains of the Brucella Group 1

ANDREWES, C. H., AND ELFORD, W. J.—The " Killing " of Bacteria by Bacteriophage 13

JENNER, H. D., AND KAY, H. D.—Plasma Phosphatase, III : A Clinical Method for the Determination of Plasma Phosphatase 22

ZOZAYA, J.—The Standardization of Antidysenteric Serum (Shiga) 28

PIJPER, ADRIANUS, AND DAU, HELEN.—Cross-Immunity Between South African Typhus and Tick-Bite Fever 33

ELFORD, W. J., AND ANDREWES, C. H.—Filtration of Vaccinia Virus Through Gradocol Membranes 36

ABDOOSH, Y. B.—Some Observations on the Agglutination of *V. choleræ* . . 42

FRASER, F. H., AND ROSS, M. A.—The Effect of Streptococcal Toxin on Chinchilla Rabbits 51

POPE, C. G., AND PINFIELD, S.—The Production of Coccal Forms of *C. diphtheriæ* in Media Containing Copper 60

BEDSON, S. P.—The Nature of the Elementary Bodies in Psittacosis 65

PATTERSON, JOCELYN, AND ADLER, JOSEPH.—The Non-Applicability of the Schütz-Borissow Law in the Estimation of Pepsin Activity by Mett's Method 72

WHITE, F. D.—On Serum Bilirubin : I. The Diazo Reaction as a Quantitative Procedure 76

ANDREWES, C. H.—Influence of the Bacterial Cell on the Phage-Antiphage Reaction 85

MAITLAND, H. B., LAING, A. W., AND LYTH, RUPERT.—Observations on the Growth Requirements of Vaccinia Virus *In Vitro* 90

PETRIE, G. F., AND MORGAN, W. T. J.—The Curative Action of Anti-Pneumococcus Serum (Type I) in Mice 96

No. 2.—APRIL.

TAYLOR, N. B., AND WELD, C. B.—The Mobilization and Excretion of Calcium Following Overdosage with Irradiated Ergosterol 109

JENKINS, C. E.—A Displacement Method for Estimating the Cell-Volume in Blood 127

ANDERSON, DAVID FYFE, AND TOMPSETT, SIDNEY LIONEL.—Observations on the Inorganic Sulphate Content of the Blood in Eclampsia 130

PAGE

MORRIS, NOAH, RENNIE, J. BASIL, AND MORRIS SAMUEL.—On the Effect of Intravenous Injection of Glycine on the Serum Calcium 132

HINDLE, E.—An Attempt to Demonstrate Residual iVirus n Monkeys which had Recovered from Yellow Fever 135

WILKINSON, JOHN F.—The Action of Acetylcholine on the Gastric Secretion in Man 141

SPENCE, A. W.—The Basal Oxygen Consumption of Goitrous and Non-Goitrous Rats 149

SPENCE, A. W.—The Effect of Vitamin Deficiency on the Structure of the Thyroid and Thymus Glands 157

BRAIN, R. T.—The Demonstration of Herpetic Antibody in Human Sera by Complement-Fixation, and the Correlation between its Presence and Infection with Herpes Virus 166

WILLS, LUCY.—Spontaneous Fluctuations in the Reticulocyte Count in Pigeon's Blood 172

GOULSTON, DAPHNE, AND MOTTRAM, J. C.—On the Technique of Exposing the Chorio-Allantoic Membrane of the Chick Embryo for Experimental Purposes 175

ANDERSON, DAVID FYFE.—The Serum Calcium Content in Eclampsia . . 182

No. 3.—JUNE.

LIGNERIS, M. J. A. DES.—The Hydrogen-ion Concentration of Fowl's Blood in Rous' Sarcoma and in Infections (Avian Tuberculosis and Salmonellosis) . 189

WHITEHEAD, RAYMOND.—Cortical Proliferation in the Mouse Suprarenal after Peptone 200

POPE, C. G.—The Production of Toxin by *C. diphtheriæ*. I: Energy Sources . 207

POPE, C. G.—The Production of Toxin by *C. diphtheriæ*. II: Effects Produced by Additions of Iron and Copper to the Medium 218

FINDLAY, G. M.—Intranuclear Bodies in the Liver-Cells of Mice 223

FINDLAY, G. M.—The Transmission of Louping Ill to Monkeys 230

KLIGLER, I. J., AND OLITZKI, L.—Studies on Protein-Free Suspensions of Viruses. IV. The Antigenic Properties and Serological Reactions of Protein-Free Suspensions of Phage 237

TODD, E. W.—Antihæmolysis Titres in Hæmolytic Streptococcal Infections and their Significance in Rheumatic Fever 248

CRAIGIE, JAMES.—The Nature of the Vaccinia Flocculation Reaction, and Observations on the Elementary Bodies of Vaccinia 259

FLOREY, H., CARLETON H. M.,, AND WELLS, A. Q.—Mucus Secretion in the Trachea 269

SCHÜTZE, HARRY.—Studies in *B. pestis* Antigens: I. The Antigens and Immunity Reactions of *B. pestis* 284

PAGE

SCHÜTZE, HARRY.—Studies in *B. pestis* Antigens: II. Antigenic Relationship of *B. pestis* and *B. pseudotuberculosis rodentium* 289

SCHÜTZE, HARRY.—Studies in *B. pestis* Antigens: III. The Prophylactic Value of the Envelope and Somatic Antigens of *B. pestis* 293

No. 4.—AUGUST.

CHAMBERLAIN, ERNEST NOBLE, AND CORLETT, RICHARD LOVELL.—Cholesterol Variations in Experimental Anæmias 299

ROBINSON, G. L.—The Growth of *B. pyocyaneus* in Synthetic Media . . . 310

GOULSTON, DAPHNE.—The Action of Beta Radiations from Radium on the Chorio-Allantoic Membrane of the Chick Embryo 317

FLOREY, H.—Mucous Changes in the Epithelial Cells of the Rat's Vagina during the Early Stages of Pregnancy 323

MACKIE, T. J., FRASER, A. H. H., FINKELSTEIN, M. H., AND ANDERSON, E. J. M.—The Influence of Nutrition on Susceptibility to a Bacterial Toxin . . 328

BROWN, H. C., AND BROOM, J. C.—Further Observations on Bacterial Cataphoresis 334

BROOM, J. C., AND BROWN, H. C.—Migration Rate and Virulence of *C. diphtheriæ* 337

MORGAN, W. T. J.—The Estimation of Small Amounts of a Specific Bacterial Polysaccharide by the Induction of Anaphylaxis 342

FLOREY, HOWARD.—Experimental Inflammation of the Colon: (*a*) Relationship of Mucus Production in Goblet-Cells to the Golgi Apparatus; (*b*) Mitochondrial Changes 349

DUNGAL, NIELS.—Schick Tests in Iceland 360

HOLMES, BARBARA E., AND PIRIE, ANTOINETTE.—Growth and Metabolism of the Bovine Pleuro-Pneumonia Virus 364

GOHAR, M. A.—A Serological Study of *V. choleræ* and Related Vibrios . . 371

PETRIE, G. F.—A Specific Preciptin Reaction Associated with the Growth of Agar Plates of Meningococcus, Pneumococcus, and *B. dysenteriæ* (Shiga) . . 380

MARRACK, JOHN, AND SMITH, FRANK CAMPBELL.—Quantitative Aspects of Immunity Reactions: The Combination of Antibodies with Simple Haptenes 394

No. 5.—OCTOBER.

TAYLOR, N. B., AND WELD, C. B.—The Toxic Effects of Excessive Doses of Irradiated Ergosterol upon Young Animals 403

HENDERSON, D. W.—Studies on *Clostridium chauvœi*. I: The Analysis of the "H" and "O" Antigens of *C. chauvœi* 412

HENDERSON, D. W.—Studies on *Clostridium chauvœi*. II: Active Immunization with Pure "O" Antigen 421

PAGE

DE WESSELOW, O. L. V. S., AND GRIFFITHS, W. J.—The Blood Guanidine in Hypertension 428

SMITH, WILSON.—A Heat-Stable Precipitating Substance Extracted from Vaccinia Virus 434

ELFORD, W. J., AND ANDREWES, C. H.—The Sizes of Different Bacteriophages . 446

FRY, R. M.—The Isolation of Organisms in the Presence of *B. proteus* . . 456

GYE, W. E.—The Propagation of Fujinami's Fowl Myxosarcoma in Ducklings . 458

BEDSON, S. P., AND BLAND, J. O. W.—A Morphological Study of Psittacosis Virus, with the Description of a Developmental Cycle 461

No. 6.—DECEMBER.

PURDY, W. J.—The Propagation of the Fujinami Fowl-Myxosarcoma in Adult Ducks 467

PURDY, W. J.—The Propagation of the Rous Sarcoma No. 1 in Ducklings . . 473

BEGG, A. M., AND AITKEN, H. A. A.—The Effect of Tumour Regression and Tissue Absorption on Some Properties of the Serum 479

DUNCAN, J. T.—The Use of Equivalent Proportions of Antigen and Serum in Absorption of Precipitin 489

DUNCAN, J. T.—The Relation of Optimal Agglutination to the Equivalent Serum-Suspension Ratio 498

GORDON, JOHN, AND COOPER, KENNETH ERNEST.—A Study of the Phosphorus Distribution in Bacterial Cultures. Part III: The Phosphatase Activity of *B. coli* and Staphylococcus 503